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ABSTRACT

For many African American children from low-income backgrounds, cognitive performance can be enhanced in contexts thematically characterized by aspects of Afro-cultural ethos. This report presents and describes the results of six experimental studies (two studies on each) of three cultural themes of primary interest: movement, communalism, and verve. Samples for the studies were: (1) 128 African American and European American second graders (movement study); (2) 124 African American and European American second and fourth graders (movement study); (3) 96 African American fourth graders (communalism study); (4) 72 African American fifth graders (communalism study); (5) 43 African American third and fourth graders (verve and physical stimulation study); and (6) 192 low-income African American and European American third and sixth graders (verve and physical stimulation study). For each study, the paper reviews the research on previous studies, presents the analyses and results of the two studies devoted to that theme, and synthesizes and discusses the findings of the six investigations collectively. The results of this body of research were generally consistent with previous findings and add to the literature on African American children's learning and achievement performance in areas such as cognitive processing, comprehension of story and textbook material, creative problem solving and task engagement, academic-related task performance, experimental task performance, and motivation. (Contains 5 graphs, 13 tables, and 47 references.) (SLD)

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CRESPAR

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THE ROLE OF CULTURAL FACTORS IN SCHOOL RELEVANT COGNITIVE FUNCTIONING

Synthesis of Findings on Cultural Contexts, Cultural Orientations, and Individual Differences

A. Wade Boykin

Caryn T. Bailey

Report No. 42 / April 2000

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The Center

Every child has the capacity to succeed in school and in life. Yet far too many children, especially those from low-income backgrounds, are placed at risk by school practices that are based on a sorting paradigm in which some students receive high-expectations instruction while the rest are relegated to lower quality education and lower quality futures. The sorting perspective must be replaced by a "talent development" model that asserts that all children are capable of succeeding in a rich and demanding curriculum with appropriate assistance and support.

The mission of the Center for Research on the Education of Students Placed At Risk (CRESPAR) is to conduct the research, development, evaluation, and dissemination needed to transform schooling for students placed at risk. The work of the Center is guided by three central themes — ensuring the success of all students at key development points, building on students' personal and cultural assets, and scaling up effective programs — and conducted through research and development programs in the areas of early and elementary studies; middle and high school studies; school, family, and community partnerships; and systemic supports for school reform, as well as a program of institutional activities.

CRESPAR is organized as a partnership of Howard University and Johns Hopkins University, and supported by the National Institute on the Education of At-Risk Students (At-Risk Institute), one of five institutes created by the Educational Research, Development, Dissemination and Improvement Act of 1994 and located within the Office of Educational Research and Improvement (OERI) at the U.S. Department of Education. The At-Risk Institute supports a range of research and development activities designed to improve the education of students at risk of educational failure because of limited English proficiency, poverty, race, geographic location, or economic disadvantage.

Abstract

For many African American children from low-income backgrounds, cognitive performance can be enhanced in contexts thematically characterized by aspects of Afro-cultural ethos. This report presents and describes the results of six experimental studies (two studies on each) on three cultural themes of primary interest, namely movement, communalism, and verve. For each of them, the authors review the research concerning previous studies, present the analyses and results of the two studies devoted to that theme, and synthesize and discuss the findings of the six investigations collectively.

The results of the current body of research were generally consistent with previous findings and added to the literature on African American children's learning and achievement performance in areas such as cognitive processing, comprehension of story and textbook material, creative problem solving and task engagement, academic-related task performance, experimental task performance, and motivation.

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Introduction

Despite the persistent school failure of many African American school children and increasing evidence that cognitive performance is linked to cultural context, most school reform efforts have not used cultural factors as vehicles to enhance these children's academic functioning. Research findings suggest that contexts for learning and performance that are more responsive to the child's familiar and prevailing cultural experiences may facilitate the child's cognitive functioning, and consequently, his or her achievement. It is posited that within culturally informed or culturally relevant contexts, children may be more encouraged to employ their existing or emerging competencies and be more intrinsically motivated to achieve (Boykin, in press). By implication, intellectually valued skills may be revealed in many children for whom such skills were presumed to be lacking.

The Cultural Factors in School Relevant Cognitive Functioning project was launched to conduct experimental research investigating the validity of the claim that for many African American children from low-income backgrounds, cognitive performance can be enhanced in contexts thematically characterized by aspects of an Afro-cultural ethos. It further seeks to determine: (a) the range of conditions that produce, amplify, or undermine these enhancement effects; (b) the psychological processes that undergird them; (c) the individual and group difference factors that inform them; and (d) the socialization factors that antecede them. The cultural themes of primary interest to the researchers were movement, communalism, and verve. The ultimate aim of this project is to systematically introduce these themes into classroom pedagogy and to later gauge the resultant academic outcomes. The Cultural Factors project has employed various task conditions that are informed by these themes, and has addressed a range of cognitive tasks that reflect the types of academic challenges many children face in school. Moreover, a battery of instruments has been developed to measure the children's orientation toward or preference for learning environments characterized by the various Afro-cultural themes, as well as their motivational experience while working in the various task contexts.

This report presents and describes the results of six experimental studies (two studies each) on the three cultural themes. For each theme, a review of previous research related to it is presented first, followed by the analyses and results of the two studies devoted to that theme. The report concludes with a synthesis of the findings from all six studies and suggestions for future research directions.

The Movement Studies

Review of the Literature

Boykin (1995) as well as others (Akbar, 1976; Morgan, 1980, 1990; Gilmore, 1985) have advocated the centrality of movement to the cultural ethos of African Americans. Empirical research has revealed that learning contexts which provide syncopated music and the opportunity for movement more significantly enhance the learning of many African American children from low-income backgrounds than do those in which these elements are not present (Allen & Boykin, 1991; Allen & Butler, 1996; Boykin & Allen, 1988; Boykin & Cunningham, in press). The particular operationalization of the relatively high movement-expressive context is consistent with the theoretical research of a community of scholars who have suggested that such a patterning of syncopated music and movement opportunity is often cultivated in many African American homes and communities (Abrahams & Szwed, 1983; Boykin, 1979; Hale, 1980; Jones, 1979; Morgan, 1980; Thompson, 1984; Young, 1970).

According to Boykin (1995), African Americans typically place a premium upon the interconnectedness of movement expression, percussion, and polyrhythmic syncopation. Conceptually, movement and music, either independently or joined in coordination, traditionally have been viewed by many in the African American community as ways of engaging life and as vital to individual and collective psychological health. This perspective is further reflected in a rhythmic orientation toward life as manifested in African Americans' characteristic patterns of speech and activity. It is also manifested by a tendency toward and receptiveness to a rich and expansive movement and gestural repertoire. This usually encompasses kinesthetically complex displays of simultaneous, often coordinated, movements and gestures.

Studies by Boykin and Allen (1988) and Allen and Boykin (1991) reveal that low-income African American children performed significantly better on paired-associate tasks when their learning context provided syncopated music and the opportunity for movement than when it did not. For European American children, however, learning was impeded by the presence of syncopated music and movement opportunity, and enhanced by its absence. Boykin and Cunningham (in press) found that they could broaden the range of enhancement outcomes for African American children by targeting the facilitating effects of music and movement opportunity on higher-order cognitive processing tasks, such as encoding and inferencing. Again, African American children's performances on both types of tasks were significantly higher in the learning context that provided syncopated music and movement opportunity.

Movement Study No. 1

This investigation had three objectives. First, it examined the effects of music and movement opportunity on the cognitive processing of both African American and European American children. Second, it explored the cognitive-processing effects of providing these two sets of children with story content punctuated with either low-movement imagery or high-movement imagery. Third, it assessed the relationships among movement-expressive orientation, teacher classroom ratings, standardized test performance, and story comprehension in both high-movement-expressive/music contexts and low-movement-expressive/no-music contexts.

Sample

The sample consisted of 128 second grade African American and European American children from low-income backgrounds. The sample was divided equally by cultural group and gender. The students were drawn from two racially integrated public schools in Baltimore, Maryland. All of the students participated in free or reduced-cost lunch programs at their respective schools.

Measures

The *Child Activity Questionnaire* (CAQ) assesses children's perception of their movement expressiveness (Boykin & Allen, 1988). The CAQ consists of five Likert-type items anchored by a five-point scale ranging from 1 (Almost never) to 5 (Almost always). The CAQ score is the sum of the item responses.

The *Teacher Ratings on Classroom Achievement* (TRCA) is an objective, single-item measure of students' classroom achievement level which is completed by the students' homeroom teachers (Tuck & Boykin, 1989). The five-point scale ratings range from 1 (Poor achievement) to 5 (Excellent achievement).

The *Teacher Ratings on Classroom Motivation* (TRCM) is a subjective, five-item measure of students' interest and participation in their classroom curricula (Tuck & Boykin, 1989). This measure is also completed by the students' homeroom teachers. Each item is rated along a four-point scale ranging from 1 (Strongly disagree) to 4 (Strongly agree). The total motivation score is the mean of the item ratings.

Reading and vocabulary scores on the *Comprehensive Test of Basic Skills* (CTBS) were obtained for each of the students participating in the study.

Experimental Tasks

Comprehension performance is assessed by two types of cognitive processing: encoding and inferencing (Sternberg, 1985, 1986). Two *Movement Encoding Questionnaires* (MEQs) were devised by Boykin and Cunningham (in press) to evaluate students' knowledge of salient and factual information about two short stories by Julius Lester (1989), entitled "Why the Sun and the Moon Live in the Sky" and "Why Dogs Chase Cats." Two *Movement Inferencing Questionnaires* (MIQs) were also developed to measure students' comprehension of significant relationships between two or more story facts (Boykin & Cunningham, in press). Inferencing is considered a more higher-order type of cognitive processing. Each questionnaire is comprised of 10 open-ended inquiries. A score of one point is given for each correct answer; no points are given for incorrect answers. Total scores for each scale are the sum of the scores across the responses. Type of cognitive processing (encoding or inferencing) is a repeated measure or within-subjects factor.

Experimental Contexts

The students were presented with the two short stories (each approximately three minutes in length) in both a high-movement-expressive (HME) learning context and a low-movement-expressive (LME) learning context. In the HME learning context, the children were provided the opportunity to move in synchrony with the music during storytelling and were encouraged to do so. The experimenter read aloud one of the stories in a rhythmic fashion to the beat of syncopated music while moving rhythmically (i.e., foot tapping and finger snapping). A portable, 100-watt radio/cassette player provided the music. By contrast, in the LME learning context, the experimenter read a story to the children in monotonal fashion in the absence of music and without exhibiting rhythmic movements. Opportunity for movement expression was not provided for nor was it encouraged among the children. The HME context versus the LME context during the story presentations was a repeated measures or within-subjects factor.

The story-content manipulation entailed modifying the two short stories noted above to encompass themes consistent with the movement-expressive dimensions. That is, the stories were either imbued with high-movement content (HMC), in which the characters and themes were represented as engaging in high-movement activities, such as running, jumping, dancing, and the like; or with low-movement content (LMC), in which characters and themes were represented by activities low in action and kinesthetics. HMC versus LMC was a between-subjects factor.

Data Collection

The children were tested during the school day in racially homogenous groups of four (two females and two males). Each group was presented with the two short stories, one in the HME context and one in the LME context. The students were read stories containing either HMC or LMC. After each story presentation, the encoding and the inferencing questionnaires (MEQ and MIQ) were administered to the children. Each question was read aloud twice by the experimenter, and the children were given one minute to write down their responses. The CAQ was administered immediately following the completion of the experimental sessions. The TRCA and TRCM measures were administered simultaneously and completed by the students' homeroom teachers within a week following the completion of data collection activities. The children's CTBS scores were obtained after the experiment was completed.

Results

Reliability of Measures. The CAQ measured the students' perception of their movement expressiveness. The instrument yielded an internal alpha reliability coefficient of .62 for the combined sample, .60 for African American students, and .63 for European American students. The TRCM measured teachers' perceptions of students' classroom motivation. This scale yielded reliability coefficients of .90 for the combined sample, .88 for African American students, and .95 for European American students.

Analysis of Mean Differences. Analysis of mean difference revealed no significant findings in overall comprehension between the two student groups. However, a significant interaction was revealed for cultural group and learning context. That is, comprehension for African American children was found to be higher when they were presented with stories in the HME context as opposed to the LME context (see Table 1). By contrast, European American children's comprehension was higher when stories were presented to them in the absence of movement-expressive opportunities and music (the LME context) as opposed to when both of these elements were present (the HME context).

Accordingly, Table 2 reveals the significant interaction between cultural group and story content. For example, it shows that African American children's comprehension was significantly enhanced when the story was imbued with HMC as opposed to LMC, while European American children's comprehension was significantly enhanced when the story content encompassed low movement as opposed to high movement activities.

Table 1
Mean Difference in Overall Comprehension
(Cultural Group x Learning Context Interaction)

	Mean Score		F	Level of Significance
	Low-Movement-Expressive Context	High-Movement-Expressive Context	37.66	.0001
African American (n=64)	6.94	9.36		
European American (n=64)	11.77	5.67		

Table 2
Mean Difference in Overall Comprehension
(Cultural Group x Story Content Interaction)

	Mean Score		F	Level of Significance
	Low-Movement Content	High-Movement Content	20.33	.0001
African American (n=64)	6.38	9.92		
European American (n=64)	9.75	7.68		

Table 3 displays the significant three-way interaction obtained for cultural group, learning context, and story content. It reveals that African American children's highest comprehension performance occurred when they were read high-movement content stories in high-movement-expressive contexts. Conversely, their lowest comprehension performance occurred when they were read low-movement content stories, presented in low-movement-expressive contexts. The opposite was true for European American children, who exhibited their highest level of comprehension under LMC/LME context conditions and their lowest level of comprehension under HMC/HME conditions.

Table 4 shows the significant three-way interaction for learning context, story content, and cognitive processing. As these data reveal, no difference was found in student encoding and inferencing performance for story content in either of the two contexts. However, when students were read stories with low-movement content (LMC), their encoding performance was significantly higher than their inferencing performance in both the HME and LME contexts.

Table 5 illustrates the significant mean differences in child activity (as measured by the CAQ), teacher classroom ratings, and CTBS measures. It shows that African American children received higher CAQ scores than did European American children, but lower classroom achievement and motivation teacher-ratings (as measured by the TRCA and the TRCM), as well as lower CTBS vocabulary scores.

Table 3
Mean Difference in Overall Comprehension
(Cultural Group x Learning Context x Story Content Interaction)

		Mean Score		F	Level of Significance
		Low-Movement-Expressive Context	High-Movement-Expressive Context	23.41	.0001
African American (n=64)	Low-Movement Content	5.69	7.07		
	High-Movement Content	8.19	11.65		
European American (n=64)	Low-Movement Content	13.13	6.38		
	High-Movement Content	10.41	4.97		

Table 4
Mean Difference in Cognitive Processing Performance
(Learning Context x Story Content x Cognitive Processing)

	Mean Score				F	Level of Significance
	Low-Movement-Expressive Context		High-Movement-Expressive Context		4.62	.03
	Encoding	Inferencing	Encoding	Inferencing		
Low-Movement Content (n=64)	5.03	3.87	3.69	3.03		
High-Movement Content (n=64)	4.80	4.50	4.50	4.13		

Table 5
Mean Difference in Child Movement Activity, Teacher Ratings, and Comprehensive Test of Basic Skills (CTBS) Measures by Cultural Group

	Mean Score		Level of Significance
	African American (n=64)	European American (n=64)	
Child Activity	27.13	19.60	.001
Classroom Achievement	2.33	3.97	.001
Classroom Motivation	18.22	22.73	.001
CTBS Reading Score	535.88	563.61	ns
CTBS Vocabulary Score	412.34	588.32	.001

Analysis of Relationships. Table 6 illustrates the correlation between child activity and cognitive processing. These findings reveal that African American children who reported greater levels of movement expressiveness demonstrated greater comprehension (encoding, inferencing, and overall comprehension) in high-movement-expressive contexts. For European American children, however, higher levels of movement expressiveness were related to lower levels of comprehension (encoding and overall comprehension) in both the HME and LME contexts.

Correlation analysis findings relative to movement expressiveness and overall comprehension of story content are displayed in Table 7. This table shows that, for African American children, higher levels of child activity were related to greater learning when the stories were imbued with both high- and low-movement content in the HME context. For European American children, greater movement expression inhibited their learning of stories with high movement content in both high- and low-movement-expressive contexts.

Table 6
Correlation Coefficient of Child Movement Activity and Cognitive Processing in Movement-Expressive Contexts by Cultural Group
(*n*=128)

	LME Context Encoding	LME Context Inferencing	LME Context Total	HME Context Encoding	HME Context Inferencing	HME Context Total
African American Child Activity	.19	.10	.15	.39**	.44***	.42***
European American Child Activity	-.39**	.10	-.31**	-.43**	.22	-.26*

* p<.05 ** p<.01 *** p<.001

Table 7
Correlation Coefficients of Child Activity and Comprehension in Movement-Expressive Contexts with Movement Story Content by Cultural Group
(*n*=128)

	Low Movement Story Content		
	Low-Movement-Expressive Context	High-Movement-Expressive Context	Total Context Comprehension
African American Child Activity	.14	.31*	.22
European American Child Activity	-.27	-.18	-.22
	High-Movement Story Content		
	Low-Movement-Expressive Context	High-Movement-Expressive Context	Total Context Comprehension
African American Child Activity	.17	.57**	.36*
European American Child Activity	-.33*	-.36*	-.34*

*p<.05 **p<.001

Movement Study No. 2

This study examined the effects of providing movement opportunity and syncopated music during both the story presentation and break periods on the story comprehension performance and task motivation of low-income African American and European American

students. First, movement expressive opportunity was extended to include the break session contexts between each learning context. Second, the study employed more classroom-relevant pedagogy, thereby increasing the scope of the findings to classroom contexts. Third, this study represented the first in this line of research to examine the effects of movement expressiveness on children's learning and motivation at differing development levels, namely the second and fourth grades. Lastly, the research examined the relationship of culturally structured, home-based, movement-expressive activities to learning in various movement-expressive contexts. Thus, the findings of this study offer several contributions to the exploration of the centrality-of-movement paradigm.

Sample

This study involved 124 second and fourth grade children from low-income backgrounds. Sixty-four students were African American and 60 were European American. The sample was equally divided by gender. The students were drawn from two racially integrated public schools in Baltimore, Maryland. All of the students in the sample participated in either the free or reduced-cost lunch programs.

Measures

The *Home Movement-Expressive Questionnaire* (HMEQ) was designed by the researchers to measure students' perceptions of the frequency of movement-expressive attitudes and practices occurring in their home environments (Boykin & Mungai-Kamau, 1997). The scale contains 18 items rated along a five-point Likert-type scale ranging from 1 (Almost never) to 5 (Almost always). The total score is the sum of the item responses.

A modified version of the *Task Motivation Questionnaire* (TMQ) developed by Bailey (1996) was designed to assess students' stated task preference, task effort, and task persistence in the two movement-expressive learning contexts, as well as their preference for and persistence in the two movement-expressive break contexts. This instrument contains 10 single-item evaluations rated along a six-point Likert-type scale ranging from the lowest motivational response (1) to the highest motivational response (6). The total scores for each context are the means of the related item responses.

Experimental Tasks

Six *Encoding Questionnaires* (EQs) were devised to evaluate students' comprehension of salient and factual information about each of the six stories employed in this investigation (Boykin & Mungai-Kamau, 1997). Each questionnaire contains five open-ended inquiries. A

score of one point is assigned for each correct answer and no points are assigned for each incorrect answer. The total score is the sum of the response items.

Experimental Contexts

Students were read three stories in a high-movement-expressive (HME) context and three stories in a low-movement-expressive (LME) context. In the HME context, the short story was read aloud in a rhythmic fashion to the beat of syncopated music while the experimenter exhibited and encouraged movement expression on the part of the students. In the LME context, the story was read aloud in a normal speaking voice without music accompaniment or the exhibition or encouragement of movement expression from the experimenter. After immediate comprehension testing and before the presentation of the next story, students were given a three-minute break session as the experimenter prepared for the next lesson. During the break sessions, the students were provided with either music and the opportunity to move (HME break context), similar to that afforded in the HME story presentation context, or they were provided with neither music nor movement opportunity (LME break context). Three stories were presented in each learning context; therefore, there were three such interspersed break sessions. Students had all their break sessions either with music and movement opportunity or without music and without movement opportunity. Movement-expressive/music versus non-movement-expressive/no music in story presentation contexts was a within-subjects factor. The comparison value of the same two elements during the break periods between story presentations was a between-subjects factor.

Data Collection

The children were tested in their classrooms during the school day in cultural- and grade-homogenous groups of four (two females, two males). Each group was presented with three stories in both HME and LME contexts, with three corresponding interspersed break periods after each story presentation. Immediately following each presentation, the students were administered the relevant EQ. The experimenter read aloud each EQ item twice, and students were allowed one minute for each response. At the conclusion of the final comprehension testing session, the students completed both the HMEQ and the TMQ.

Results

Reliability of Measures. The HMEQ assessed the children's perception of the level of movement expressiveness occurring in their homes. The scale yielded internal alpha coefficients of .86 for the combined sample, .77 for African Americans, and .85 for European Americans.

Analysis of Mean Differences. No significant difference in overall story comprehension performance was found for the two cultural groups. However, Table 1 reveals the significant interaction found between cultural group and learning context. Comprehension for African American children was higher in the HME context, whereas for European American children, comprehension was higher in the LME context.

Table 1
Mean Differences in Overall Comprehension
Cultural Group by Learning Context Interaction

	Mean Score		F	Level of Significance
	Low-Movement-Expressive	High-Movement-Expressive	149.52	.0001
African American (n=64)	1.87	2.73		
European Americans (n=60)	2.73	1.58		

Graph 1 illustrates the significant three-way interaction for cultural group by break context by performance trial. It shows that the comprehension performance of African American children exposed to the HME break context remained relatively stable over the three learning trials, but learning declined for those African American children exposed to the LME break context. By contrast, the comprehension performance of European American children exposed to the HME break context declined over the three learning trials while the performance of the same children exposed to LME break contexts remained relatively stable.

The significant main effects in task motivation for the learning- and break-contexts are displayed in Table 2, which shows that overall student motivation preference for and persistence on the prose learning task were higher in the HME learning contexts. Similarly, students overall reported greater task preference when exposed to the HME break context.

A significant difference in movement expressiveness at home was also revealed between the two cultural groups ($F[1,116]=6.553$, $p<.001$, n=124). African American children ($\bar{x}$=62.00) reported greater levels of movement-expressive home activities than did European American students ($\bar{x}$=47.30).

Analysis of Relationships. Overall, home-based movement expressiveness was not significantly related to learning in the HME context. However, greater levels of movement expressiveness at home were significantly related to lower comprehension in the LME context for African American children ($r=-.27$, $p<.05$, n=64).

Graph 1
Mean Differences in Overall Comprehension
Cultural Group by Break Context by Performance Trial

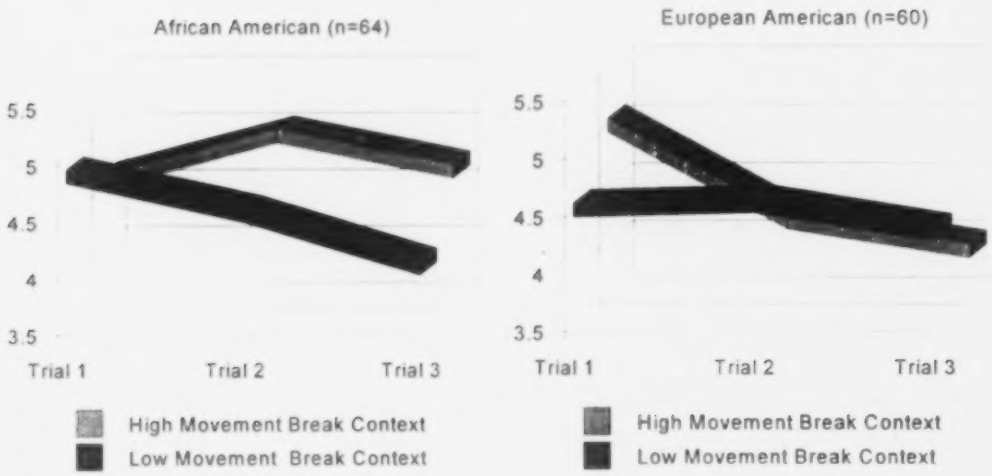


Table 2
Significant Main Effect in Task Motivation for Overall Sample
(*n*=124)

	Mean Score		F	Level of Significance
	Low-Movement-Expressive	High-Movement-Expressive		
Learning Context				
Task Preference	3.13	4.87		
Task Persistence	2.80	4.82	50.90	.0001
Break Context				
Task Preference	2.44	4.90	62.76	.0001

The Communalism Studies

Review of the Literature

Cooperative learning research has consistently indicated that students who work with three or more peers have significantly higher task performance outcomes than do those students who work individually and/or in competitive learning settings. This body of research has also demonstrated that cooperative learning settings can be especially beneficial for African Americans (Johnson & Johnson, 1991; Slavin & Oickle, 1981). This literature, however, has not offered convincing theoretical insights about the processes that undergird these effects for African Americans in cooperative academic settings.

One potential explanation for the increased performance of African Americans in cooperative learning contexts is that many African Americans tend to be socialized in environments where sharing and interdependence are promoted (Boykin, 1994). Sharing and interdependence are likely to be woven into the everyday practices of these environments and, as a result, these cultural themes become salient in many African American children's experiences. The cultural theme of communalism denotes awareness of the fundamental interconnectedness of people and an orientation that is social rather than directed toward objects (Boykin, 1986). Within a communal orientation, overriding importance is attached to social bonds and social relationships. One acts in accordance with the notion that duty to one's social group is more important than individual rights and privileges; hence, one's identity is tied to group membership rather than to individual status and possessions. In such a context, sharing is promoted because it affirms the importance of social interconnectedness and discourages self-centeredness and individual greed. The elements of communalism contrast with the notion of possessive individualism, or the notion that the individual is the sole proprietor of her or his person or capacities (Everhart, 1985); rugged individualism, or the belief that the responsibility of man is to himself (Hough, 1992); self-contained individualism, or acceptance of the boundaries between oneself and others as rigid or firm (Spence, 1985); and bifurcated individualism, or a belief in the separation of the self from work or social contexts (Carlson, 1982).

Empirical research has been conducted to examine the effects of communal learning contexts on learning performance (Albury, 1993; Dill & Boykin, in press). Albury, for example, examined the vocabulary task performance of low-income, fifth-grade African American and European American students in communal and individualistic learning contexts. She found that African American student performance was significantly higher in the communal learning context, while European American student performance was highest in the individualistic learning context.

The present investigation expanded the research on communalism, which has traditionally employed closed-ended tasks, by employing an open-ended task to examine the influence of communal and individualistic contexts on African American children's creative problem solving. Torrance and Goff (1989) define creative problem-solving as the process of finding answers to problems for which individuals cannot simply elicit the appropriate response; rather, they must create solutions for those problems. A major component of the creative problem-solving process is divergent production, that is, the generation of alternative solutions to an open-ended problem (Guilford, 1967). The production of solutions is said to be facilitated by meta-cognition, or the process by which individuals recognize new information and use that information to expand current knowledge. Meta-cognition occurs when individuals attempt to address challenging, multifaceted tasks that require strategic thinking and action (Sternberg, 1985). Successful meta-cognitive strategies require individuals to plan, monitor, modify, implement, and evaluate their thoughts and behaviors.

The present study attempted to determine the role of meta-cognition in performance outcomes, as well as to examine the relationship of student cultural orientation (communal and individualistic) to performance in the two learning contexts (communal and individualistic).

Communalism Study No. 1

Sample

The sample consisted of 96 African American fourth grade students from low-income backgrounds, who attended an inner-city public school in Baltimore, Maryland. More than 90% of the students enrolled in this school were African American. The sample was divided equally by gender. All students participated in free or reduced-price lunch programs.

Measures

The *Communalism Preference Scale* (CPS), a 10-item, sentence format, gender-specific measure, was designed by the researchers to assess student preference for communalism in the classroom context (Coleman, 1996). Responses were rated along a four-point scale ranging from 1 (Not at all like me) to 4 (Very much like me). The total score is the mean of the item responses.

The *Learning Context Questionnaire* (LCQ) is a measure of students' preference for cooperative, competitive, and individualistic learning environments (Johnson & Norem-Hebisen, 1979). The 22 scale items are rated on a seven-point continuum extending from 1

(Completely false) to 7 (Completely true). The three scores for this scale consist of the mean of the related subscale items.

The *Student Thinking About Problem-Solving-Modified* (STAPS-M) questionnaire is a 10-item measure of students' evaluation of the cognitive strategies they applied in completing the *Creative Problem-Solving Naming Task*. This instrument is a modified, distilled version of the STAPS scale developed by Armour-Thomas, Bruno, and Allen (1992). It assesses student utilization of planning skills (recognizing the problem at hand and devising probable strategies for resolution), as well as monitoring skills (overseeing steps within a devised plan; reviewing for errors and/or weaknesses; and, when the task is completed, judging whether or not the plan has been successfully implemented) in executing the problem-solving task. There are two versions of this instrument. One form evaluates how students in the communal condition approach the aforementioned task. The second form examines how students, working independently, in the individualistic condition plan and monitor their own progress on this task. The total STAPS-M mean scores are the means for the planning and monitoring subscales.

A modified version of the *Evaluative Questionnaire* (EQ) developed by Albury (1993) was designed to measure students' evaluation of the research tasks, performance contexts, and their own task performance. Two forms of the EQ were developed: one to evaluate the communal context and one to evaluate the individual context. Each of the forms contains general and specific performance-context items. The first set of items measures students' task preference and persistence on a four-point scale ranging from 1 (Don't agree) to 4 (Strongly agree). The second set of items assesses students' task effort along a four-point continuum ranging from 1 (Not at all) to 4 (Very much). The last two items measure students' evaluations of their task performance. The range of ratings for these items is from 1 (Not good) to 4 (Excellent).

Experimental Tasks

The *Creative Problem-Solving Naming Task* is an open-ended, semi-structured task that allows students the opportunity to express their critical thinking abilities (Coleman, 1996). Two versions of the task were employed in this study. The *Proud-Naming Task* requires students to write as many things as they could think of that would make one feel proud or think well of herself or himself. Similarly, the *Role Model-Naming Task* requires students to write as many things as they could think of that good role models do. The qualitative data obtained from these tasks are rated by two independent judges, who blindly evaluate each response for levels of quality and accuracy on a three-point rating scale (low, average, and high). The inter-rater reliability data are then quantified and converted into scores according to the following

criteria: a "no" or low rating receives 0 points, an average rating receives 3 points, and a high rating receives 10 points. High responses are weighted three times as much as non-high responses, to reflect the present study's research emphasis on critical thinking. All performance scores are converted to standard *Z* scores. Three points are added to each *Z* score to ensure that all scores are positive values.

Experimental Contexts

The students were randomly assigned to either an individualistic or communal problem-solving context and were administered the two naming tasks in two phases: a performance phase and a testing phase. In the individualistic context, three students worked independently on the first version of the naming task and were encouraged to do their best. In the communal context, three students worked interdependently and were encouraged to share and work together for the good of the group to ensure that everyone in the group did her or his best. Students assigned to the individualistic condition were seated in horizontally positioned desks facing the front of the classroom, while students in the communal condition were seated at a round table facing one another. During the testing phase, all students were seated at horizontally positioned desks facing the front of the classroom (as in the individualistic condition) and worked independently on the second naming task.

Data Collection

Students were tested in school in gender- and age-homogenous groups of three. The students received both versions of the Creative Problem-Solving Naming Task in either the individualistic or communal context. During the performance phase, students were given 15 minutes to complete one version of the naming task. During the testing phase, students were given 10 minutes to complete the other version of the task. Following the testing phase, students were administered the following measures: the CPS, the LCQ, the STAPS-M, and the EQ.

Results

Reliability of Measures. The LCQ measured students' attitudes toward cooperative, competitive, and individualistic learning settings. The alpha reliability coefficients for the three subscales were: competitive .71, cooperative .78, and individualistic .59. The CPS, assessing students' preference for communal classroom learning contexts, yielded an alpha reliability coefficient of .52. The STAPS-M, which examined students' evaluation of their application of cognitive strategies in performing the creative problem-solving task, yielded a low alpha reliability coefficient and, therefore, was not included in further analyses.

Analysis of Mean Differences. Table 1 reveals the significant difference in accuracy of response, quality of response, and time on task in both problem-solving conditions. Students in the communal condition achieved greater accuracy and quality of problem-solving responses than did students in the individualistic condition. Additionally, students who worked communally were found to be more engaged or spent more time persisting at the tasks than did students who worked individually.

Significant differences were also revealed in students' endorsements of cooperative, individualistic, and competitive learning contexts as measured by the LCQ. Students reported greater preference for cooperative learning settings ($\bar{x}$=5.38) than for either individualistic ($\bar{x}$=3.69) or competitive ($\bar{x}$=4.34) classroom contexts.

Table 1
***Z*+3 Mean Differences in Accuracy and Quality of Problem-Solving Responses and Time on Task in Learning Contexts (n=96)**

	Mean Score		F	Level of Significance
	Individual Context	Communal Context		
Accuracy of Responses	2.61	3.39	17.49	.01
Quality of Responses	2.62	3.38	15.85	.01
Time on Task	6.25	8.08	18.13	.01

Analysis of Relationships. Correlation analysis of students' responses on the CPS and the LCQ measures revealed several significant relationships. First, the more students preferred communalism, the more they also preferred cooperative learning environments (r=.369, p<.0001, n=96), but the less they preferred individualistic learning environments (r=-.231, p<.05, n=96). Second, the more students preferred individualistic learning contexts, the less they preferred to learn in cooperative contexts (r=-.303, p<.01, n=96). Last, a positive relationship was found between students' preferences for competitive and cooperative learning contexts (r=.205, p<.05, n=96). Analysis of relationships between students' preference for communalism and their problem-solving performance revealed that the more students preferred communalism, the more time they spent engaged in the creative problem-solving tasks in both the communal (r=.31, p<.05, n=96) and individualistic (r=.331, p<.05, n=96) contexts. Lastly, correlations among performance variables showed that greater time on task was related to the greater accuracy in problem-solving performance (r=.283, p<.05, n=96) in

the communal context and also to the greater quantity ($r=.448$, $p<.001$, $n=96$), accuracy ($r=.404$, $p<.01$, $n=96$), and quality of problem-solving responses ($r=.424$, $p<.01$, $n=96$) in the individualistic context.

The exhibited relationships between students' learning context preference and their evaluation of the performance contexts revealed three significant findings. The greater the level of preference for individualistic learning contexts:

1. the less help the students provided to their group ($r=-.315$, $p<.05$, $n=96$);
2. the less they liked working on the task with the group ($r=-.347$, $p<.05$, $n=96$); and
3. the more they enjoyed working alone ($r=.408$, $p<.01$, $n=96$).

Communalism Study No. 2

This investigation extended the contexts of Albury's (1993) work by seeking to establish whether communalism is a facilitating factor in peer-tutoring conditions for African American students. The study specifically examined the effects of an individualistic, scripted peer-tutoring criterion, and a communal peer-tutoring (absent of script, structured rules for peer exchanges, and criterion) learning context on the reading comprehension of a sample of fifth-grade African American students from low-income backgrounds. The main objectives of this investigation were threefold:

1. to establish communal peer-tutoring as an academic learning strategy that facilitates reading comprehension performance for African American students;
2. to examine the effects of various peer-learning contexts on two types of cognitive processes, namely encoding (knowledge of factual information from the text) and inferencing (comprehension of information inferred by drawing relationships between two or more events in the text); and
3. to examine the influences of cultural orientation and learning preference on learning performance outcomes.

Sample

Seventy-two (72) fifth grade African American children from low-income backgrounds were tested. The sample was divided equally by gender. All students participated in free or reduced-price lunch programs. The study was conducted at a public school in Chicago, Illinois that serves a student body that is more than 90% African American.

Measures

The *Personal Beliefs and Behaviors Measure* (PBBM) is a scenario-based, gender-specific measure designed by the researchers to gauge students' preferences for communal and individualistic behaviors and beliefs (Dill & Boykin, in press). The measure consists of 25 scenarios: 10 depicting a communal orientation, 10 depicting an individualistic orientation, and 5 neutral items. The items are rated along a four-point Likert-type scale ranging from 1 (Not at all like me) to 4 (Very much like me). The scale yields a mean score for the communal items and a mean score for the individualistic items.

The *Activity Preference Measure* (APM) was devised by the researchers to assess students' preferences for communal and individualistic activities (Dill, 1996). The measure provides an array of 34 activities from which students choose 5 activities they would like to perform each day for five weekdays. An equal number of communal/group-based and individualistic activities are among the options provided. The instrument yields a mean score for the communal activities and a mean score for the individualistic activities across the five days.

A modified version of the *Evaluative Questionnaire* (EQ) developed by Albury (1993) was employed to assess students' evaluations of the research tasks, contexts, and their learning performance in the peer-group contexts. (See the "Measures" section of the previous investigation for a detailed description of this instrument).

Experimental Tasks

The experimental task was a prose-text comprehension exercise. The story learning material consisted of two children's short stories, entitled "The Wise Man's Story" and "Woman and the Bird" (Gatti, 1994). The story was adapted from a grade-level appropriate book of African folktales. Comprehension relative to this task is measured by summing the number of correct responses on a 10-item encoding questionnaire soliciting information that can be directly recalled from explicit details in the text, and a 10-item inferencing questionnaire that solicits information inferred by drawing relationships between two or more events in the text. Type of cognitive processing (encoding or inferencing) is a within-subjects factor.

Experimental Contexts

The students were randomly assigned to one of three learning conditions: individualistic criterion, scripted peer-tutoring criterion, and communal dyad. In the first, two students worked individually on the task to meet the goals of a preestablished criterion. The students were informed that each student who satisfied the criterion would receive a reward.

In the scripted peer-tutoring criterion context, two students worked cooperatively to meet the goals of a preestablished criterion. The students were instructed to take turns playing the roles of teacher and learner and were informed that the peer-tutoring team that reached the criterion would receive a reward. In the communal dyad context, two students were told to share, help, and work well together so that they could both succeed in learning. No rewards or incentives were offered to the communal dyads. Students in each learning context were given 30 minutes to complete the learning phase. Afterwards, the students were given 10 minutes to individually complete the comprehension measures in the testing phase. Learning condition (individualistic criterion, peer-tutoring criterion, and communal dyad) is a between-subjects factor and type of cognitive processing (encoding and inferencing) is a repeated-measure factor.

Data Collection

The students were tested in school during the school day in gender-homogenous pairs. Each session consisted of three pairs of students (i.e., six students in total). The children were first administered the PBBM and the APM. These instruments were counterbalanced for order of administration. The children were then assigned to either an individualistic criterion, scripted peer-tutoring, or a communal dyad learning context in which they were given 30 minutes to complete the story comprehension task. Immediately following the learning phase, the students were given 10 minutes to complete the encoding and inferencing questionnaires during the testing phase. At the conclusion of the testing phase, the EQ was administered.

Results

Reliability of Measures. The PBBM, measuring students' endorsement of communal and individualistic behaviors and beliefs, yielded internal alpha reliability coefficients of .75 for the communal subscale and .64 for the individualistic subscale. The APM, which assesses students' preference for communal and individualistic activities, yielded an overall alpha coefficient of .50.

Analysis of Mean Differences. Table 1 details the mean difference in story comprehension across the three learning contexts. Overall comprehension performance as well as encoding and inferencing processing performances were significantly higher among students in the communal learning context than among those learning in either the scripted peer-tutoring criterion or individualistic-criterion context.

Additional analysis of variance revealed that students' preference for communal beliefs and behaviors ($\bar{x}$=2.95) was significantly higher than their endorsement of individualistic beliefs and behaviors ($\bar{x}$=2.20), as measured by the PBBM ($F[1,70]=19.88$, $p<.001$, $n=72$). Students also preferred group-based or communal activities more than individualistic activities, as measured by the APM.

Table 1
Mean Difference in Overall, Encoding, and Inferencing Comprehension Performance Across Learning Contexts
(*n*=72)

	Mean Score			F	Level of Significance
	Communal Context	Scripted Peer-Tutoring Criterion Context	Individual Criterion Context	4.15	.02
Overall Comprehension	6.67	4.29	4.21		
Encoding Comprehension	3.91	3.04	2.91		
Inferencing Comprehension	2.75	1.25	1.29		

Significant differences were also revealed in students' evaluation of the learning contexts, as measured by the EQ. Students in the communal learning context ($\bar{x}$=3.45) reported that they cared more about their peers' learning than did students in the scripted peer-tutoring criterion context ($\bar{x}$=2.91); (F[1,43]=4.13, p<.05, *n*=72). Moreover, students in the communal learning context ($\bar{x}$=3.29) reported liking their peers more often than did students in the scripted peer-tutoring criterion context ($\bar{x}$=2.50); (F[1,43]=9.64, p<.01, *n*=72). Lastly, students in the communal context ($\bar{x}$=3.50) rated their learning higher than did students in the scripted peer-tutoring criterion ($\bar{x}$=2.79) and individualistic criterion ($\bar{x}$=3.00) learning contexts (F[1,65]=4.21, p<.05, *n*=72).

Analysis of Relationships. Correlation analysis revealed that the more students endorsed a communal orientation, as measured by the PBBM, the more they also preferred to participate in communal activities (r=.23, p<.05, *n*=72), as measured by the APM.

The Verve/Physical Stimulation Studies

Review of the Literature

Numerous research investigations have demonstrated the cultural significance of using physical stimulation to yield greater performance outcomes (Boykin, 1978, 1982; Boykin, Allen, Hart-Davis, & Senior, 1997; Tuck & Boykin, 1989; Bailey & Walton, 1994). Through both informal and systematic observations, the home environments of many African American children have been characterized by Afro-cultural themes that include an emphasis on affective or emotional expressiveness, communal bonding, and especially the significance of movement, music, and percussiveness. These elements, taken together, produce the development or cultivation of a relatively high level of physical stimulation. Boykin (1983) suggests that one consequence of such cultivation may be a particular receptiveness or preference for heightened levels of physical stimulation.

Physical stimulation can be understood in terms of qualities of intensity, variability, and, density of stimulation (Boykin, 1983). Intensity refers to the liveliness or loudness of stimulation or the vigor of one's behavior. Variability connotes the level of variety or alternation among the activities or stimuli in one's environment. Density of stimulation refers to the number of stimulus elements or activities simultaneously present. As Tuck and Boykin (1989) explain, these aspects of physical stimulation are not without form or coherency. Rather, they are typically linked to specific, regularly occurring events and activities within culturally structured home environments. Consequently, they are deemed culturally appropriate and are likely to be salient and valued within these environments. Moreover, children raised within these cultural contexts are likely to be receptive to these sources and levels of stimulation in the contexts where they are present.

The relationship of stimulus variability to task performance has been well documented in the literature (Boykin, 1978, 1982; Boykin et al., 1997; Tuck & Boykin, 1989). Tuck and Boykin found that low-income African American students' performance was significantly higher in a relatively high-variability context than in a relatively low-variability context employing experimental problem-solving tasks (i.e., color matching, listening, schema reproduction, and visual scanning).

The present study attempted to replicate the enhancement effects obtained by Tuck and Boykin (1989) while employing more academically relevant problem-solving tasks. Specifically, it examined low-income African American elementary students' performance on four types of academic tasks: spelling, vocabulary, mathematics, and picture sequencing. The tasks were presented in both a high-variability and a low-variability context. Additionally, the

students' task motivation (i.e., task preference, task effort, and task persistence) was assessed for each of the performance contexts.

Physical Stimulation Study No. 1

Sample

The sample consisted of 43 third- and 29 fourth-grade African American students from low-income backgrounds who attended a public elementary school in New York City. More than 90% of the students enrolled at this school were African American; all participated in free or reduced-price lunch programs.

Measures

The *Home Stimulation Perception Questionnaire* (HSP) is a 17-item instrument designed by the researchers to measure students' perception of the frequency of various sensate stimulation-producing activities occurring within the home environment (Bailey, 1996). Each item on the scale is rated on a five-point scale from 0 (I'm not sure) to 1 (Almost never) to 5 (Almost always). The total HSP level is the mean of the items.

The *Pathway Preference Measure* (PPM) presents students with a free-form task that provides an indirect index of their preference for variability (Tuck & Boykin, 1989). It confronts students with a maze that requires them to sketch the route they would prefer to take home from school every day for one school week. The children have a choice of passing through various areas containing different points of interest as they proceed home. A score is derived by tallying the number of different areas that a child visits before reaching the end of his or her route. This score is used to compute two different expressions of preference: (a) the pathway mean score, which reflects the students' mean preference for variability across five days; and (b) the pathway variance score, which reflects changes in students' preferences for variability across the five trials. The extent to which a PPM score greater than five (the lowest possible score) is obtained indicates the amount of variation from the most direct path and, by inference, a greater preference for variability.

The *Task Motivation Questionnaire* (TMQ) was designed by the investigators to evaluate the students' stated task preference, task effort, and task persistence in both the high- and low-variability presentation contexts (Bailey, 1996). This instrument consists of six single-item inquiries rated along a four-point Likert continuum. The first two questions assess children's task interest in each performance context, with ratings ranging from 1 (Did not like) to 4 (Liked a lot). The next two inquiries evaluate the amount of effort the students' applied

while working at the tasks in both contexts; the ratings for these two items range from 1 (No effort) to 4 (A lot of effort). The last two items measure children's task persistence or how much they would like to work at the tasks again in each of the contexts; the rating scales range from 1 (Would not like) to 4 (Would like a lot). The odd-numbered items each provide a score for task preference, task effort, and task persistence, respectively, in the high-variability context; the even-numbered items each provide the respective scores in the low-variability context. The total high-variability context TMQ score is the mean of the odd-numbered items; the total low-variability context TMQ score is the mean of the even-numbered items.

Experimental Tasks

Four academic task-types were constructed for this study to assess performance in the two task variability contexts. The four task-types were: spelling, vocabulary, mathematics, and picture-sequencing. For the first, students were given a short story to read (approximately five paragraphs in length) that contained misspelled words. The children had 60 seconds to circle the misspelled words in the story. The vocabulary task consisted of 15 fill-in sentences, each containing four multiple-choice options; for each task, students were given 60 seconds to circle the word that best completed the sentence. For the mathematics task, students were given 24 addition operations to solve within a period of 60 seconds. The picture-sequencing task presented students with 15 picture scenes that varied in terms of amount of illustration detail. Students were given 60 seconds to identify the correct sequencing of the picture scenes, from the picture having the least amount of illustration detail to the completed picture having the greatest amount of detail.

These task-types were specifically chosen because they assessed the sort of cognitive processes implemented in the classroom and on standardized achievement assessments. The mean score for the last four tasks of a given type served as the performance measure for this study, yielding a total of 8 overall scores. Performance on the first task of each task-type presented was discarded for each child. These tasks were discarded in the low-variability context in order to compensate for any effects of novelty or variability that would counteract the format variability manipulation. The tasks in the high-variability context were eliminated to maintain the same number of tasks as in the low-variability context. In order to examine comparisons in overall academic performance, the scores were converted to standard Z scores. Five points were added to each Z score to ensure that all scores obtained were positive values.

Experimental Contexts

The students were presented with 20 academic task exemplars in a high-variability context and 20 academic task exemplars in a low-variability context. In the latter, the children were presented with 20 tasks (5 of each of the four academic task-types) in a blocked-sequence

format according to task-type. That is, they were presented with all five tasks of one type, followed by all five tasks of a second type, etc. In the high-variability context, the children were presented with 20 tasks in a random sequence without regard for task-type. The tasks were counterbalanced using a Latin square procedure to eliminate systematic bias attributed by gender, grade level, task set, and task presentation order. Task presentation context (low- and high-variability) was a repeated-measures factor.

Data Collection

The children were tested in school during the school day in grade-homogenous groups of five. The children were first administered the HSP, followed by the PPM. The children were then presented with the academic task exemplars under both high-variability and low-variability format presentation contexts. After task completion, the students completed the TMQ. Each session lasted approximately one hour.

Results

Reliability of Measures. The HSP was designed to assess the children's perception of the level of physical stimulus activity occurring in their homes. The scale yielded an internal alpha reliability coefficient of .66. The PPM, which is an indirect index of children's preference for variability, yielded an inter-rater reliability coefficient of .993.

Analysis of Mean Differences. Graph 1 displays the significant mean differences in students' overall academic performance and performance on each of the four academic task-types. The students' overall performance was significantly higher when the academic tasks were presented with greater variability. Similarly, significantly higher academic performance in vocabulary, mathematics, and picture-sequencing, and substantially higher performance in spelling were found in the high-variability context.

A significant main effect was also obtained in overall task motivation for the two performance contexts (see Graph 2). Students reported significantly greater motivation for the academic tasks in the high- compared to the low-variability context ($F[1,68]=4.53$, $n=72$).

With respect to home and preference levels, students' perceived home stimulation level ($\bar{x}=3.03$) was at the scale's midpoint. However, their preference for variability level ($\bar{x}=9.17$) was well above the scale's index ($\bar{x}=5.0$) indicating low-variability preference.

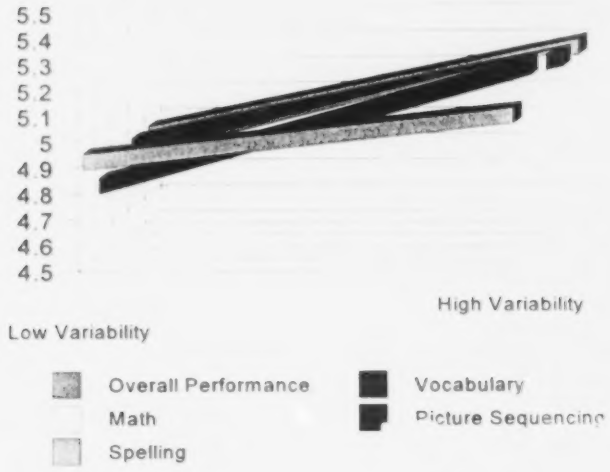
Analysis of Relationships. Correlation analysis among the home stimulation and preference for variability variables revealed only one significant finding. A positive relationship was found between the two measures of variability preference (i.e., the mean and variance scores) ($r=.336$, $p<.01$, $n=72$). Due to the lack of overall significance, these analyses were performed separately for each grade level. A significant correlation between the mean

and variance scores (r=.395, p<.001, *n*=43) was also revealed for the third grade sample. For the fourth graders, a positive relationship was obtained between home stimulation and preference for variability (r=.326, p<.04 one-tailed, *n*=29). This latter finding suggests that children from home environments that afforded greater levels of physical stimulation expressed a greater preference for variability.

Analyses were also performed to examine the relationships of home stimulation and preference for variability levels to academic performance and task motivation in the two variability contexts. As in the previous case, only one significant finding emerged: greater preference for variability was related to lower academic performance in the low-variability context (r=-.267, p<.05, *n*=72). When these analyses were performed separately by grade level, no significant findings were revealed for third graders; however, the results for the fourth graders are illustrated in Table 1. These findings reveal the following:

1. Greater preference for variability was also related to lower academic performance in the low-variability context (r=-.356, p<.05, *n*=29);
2. Greater home stimulation was marginally related to lower academic performance in the low-variability context (r=-.333, p<.07, *n*=29);
3. Children from high-stimulation homes were motivated to work harder in the high-variability context (r=.343, p<.05 one-tailed, *n*=29); and
4. The more the children preferred variability, the more they preferred and persisted at the academic tasks in the high-variability context (r=.486, p<.01, *n*=29; r=.561, p<.001, *n*=29 respectively).

Graph 1
***Z*+5 Mean Differences in Overall Performance and Performance by Academic Task-type Across Task-Variability Context**
(*n*=72)



Graph 2
Overall Task Motivation Across Task Variability Contexts
(*n*=72)

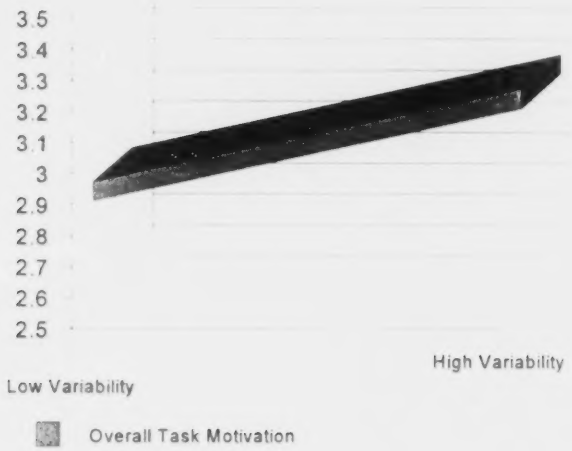


Table 1
Correlation Coefficients of Home Stimulation Perception and Preference for Variability with Task Performance and Task Motivation for Fourth Grade Sample (*n*=29)

	L-V Task Perform	H-V Task Perform	L-V Task Prefer	H-V Task Prefer	L-V Task Effort	H-V Task Effort	L-V Task Persist	H-V Task Persist
Home Stimulation Perception	-.333	-.253	-.077	.070	-.010	.343*	.145	.312
Preference for Variability (average score)	-.356x	-.103	-.12	.486**	-.078	-.054	.305	.561***
Preference for Variability (variance score)	-.079	-.090	-.089	.304	-.111	.020	.079	.362*

*p<.05 one-tailed **p<.01 one-tailed ***p< 001 one-tailed xp<.05 two-tailed

Physical Stimulation Study No. 2

This study investigated the effects of background stimulation (music) and task variability on the problem-solving performance and task motivation of a sample of low-income African American and European American third- and sixth-grade children. The study also sought to examine the particular home socialization experiences and stimulus variability preferences of the two groups of students, and their influences on students' task performance and motivation in various cultural contexts. Lastly, teacher ratings of students' classroom achievement and motivation were examined, as well as the relationship of these ratings to task performance and motivation across the two different contexts (low- and high-variability).

Sample

The sample consisted of 192 low-income African American and European American third- and sixth-grade students who attended two integrated elementary public schools in Baltimore, Maryland.

Measures

The *Home Stimulation Perception Questionnaire* (HSP) measures students' perceptions of the frequency of various sensate stimulation-producing activities occurring within their home environments (Bailey, 1996); (see the "Measures" section of the previous investigation for a detailed description of this instrument).

The *Pathway Preference Measure* (PPM) presents students with a free-form maze task that provides an indirect index of their preference for variability (Tuck & Boykin, 1989); (see the "Measures" section of the previous investigation for a detailed description of this instrument).

A modified version of the *Task Motivation Questionnaire (TMQ)* developed by Bailey (1996) was designed to assess the students' stated task preference, task effort, and task persistence in the two variability and music contexts. This instrument contains eight single-item evaluations which are rated along a four-point Likert scale, with one denoting the lowest motivational response and four, the highest motivational response. The first six items are identical to those contained in the original TMQ employed in the previous study (see the "Measures" section of the previous investigation for a detailed description of these scale items). The remaining two items measure the students' task motivation in the music and no music contexts.

The *Teacher Ratings on Classroom Achievement* (TRCA) provides an objective rating of students' classroom achievement level (Tuck & Boykin, 1989). The *Teacher Ratings on Classroom Motivation* (TRCM) provides a subjective measure of students' interest and participation in classroom curricula (Tuck & Boykin, 1989). The two instruments are completed by the students' homeroom teachers (see the "Measures" section of Movement Study No. 1 for a detailed description of these instruments).

Experimental Tasks

The study employed four types of experimental problem-solving tasks developed by Tuck and Boykin (1989). The task-types are as follows:

1. ***color matching*** (matching 10 four-color combinations in a column with those in a different sequence in a second column within 60 seconds);
2. ***listening*** (listening to a story read aloud and then writing down the number of times a previously identified target word appears in the story in 60 seconds);
3. ***schema reproduction*** (viewing a 10-dot pattern with horizontal symmetry generated within a six-by-six square grid presented for 15 seconds and then reproducing the pattern onto a blank grid in 45 seconds); and
4. ***visual scanning*** (visually scanning 30 columns of 30 rows of letters typed on a page and crossing out a previously identified target letter each time it appears within 60 seconds).

All performance scores were converted to standard *Z* scores. Five points were added to each *Z* score to ensure that all scores obtained were positive values (for detailed scoring procedures see the "Measures" section of the previous investigation).

Experimental Contexts

The students were presented with 20 task exemplars (5 of each of the four task-types) in a low-variability context and 20 task exemplars in a high-variability context. In the former, the 20 tasks were administered in a blocked-sequence format (i.e., all 5 of one type, followed by all 5 of a second type, etc.). In the high-variability context, the students were presented with 20 tasks in random sequential order without regard for task-type. Half of the sample performed the tasks with rhythmic, syncopated music on in the background while the other half completed the tasks without background music. Task presentation context (low- and high-variability) was a within-subjects factor; whereas, background stimulation (music vs. no music) was a between-subjects factor.

Data Collection

The children were tested in school during the school day in race- and grade-homogeneous groups of six. The HSP was administered first, followed by the PPM. Forty problem-solving tasks were then presented (20 in the high-variability context and 20 in the low-variability context) according to a preestablished counterbalancing sequence. Half of the children completed the tasks in the presence of background music; the other half worked in the absence of background music. Upon task completion, the students completed the TMQ. School administrative personnel distributed the TRCA and TRCM instruments to the homeroom teachers for completion.

Results

Reliability of Measures. The HSP assessed students' perceived levels of physical stimulus home activities. In the present study, this measure yielded internal alpha reliability coefficients of .91 for the combined sample, .91 for the African American children, and .89 for the European American children. The PPM, which is an indirect index of students' preference for variability, yielded an inter-rater reliability coefficient of .93. The alpha reliability coefficient for the TRCM measure was .96 for the combined sample, .96 for the African American children, and .95 for the European American children.

Analysis of Mean Differences. Graph 1 displays the significant cultural group by task variability context by background stimulation interaction. It shows that African American children's highest problem-solving performance was obtained in the high-variability context with background music while their lowest performance was obtained in the low-variability context without background music. Task performance in the remaining contexts, low-variability with background music and high-variability without music, was virtually the same. By contrast, the European American children achieved their highest task performance in the high-variability context with no background music and their lowest performance in the high-variability context with background music.

Table 1 displays the mean differences in home stimulation perception (as measured by the HSP), preference for variability (as assessed by the PPM mean score), and teacher ratings of classroom achievement and motivation. The African American children reported higher levels of home stimulation activity and preference for variability but received lower classroom achievement and motivation ratings than did the European American children.

Analysis of Relationships. Correlation analysis between home stimulation and stimulus variability preference revealed that African American children who reported higher levels of home stimulation activity expressed greater preference for stimulus variability ($r=.28$, $p<.05$, $n=96$). No significant relationships were revealed for European American children in this regard. Analysis of home stimulation and variability preference levels with performance revealed that higher levels of home stimulation and greater student preference for variability were related to higher achievement outcomes for African American children when tasks were presented with greater variability, both with and without background music (see Table 2). Task motivation findings indicated that the more African American children were motivated overall in the two high-variability contexts (with and without background music), the greater were their performance outcomes (see Table 2). No significant findings were found for European American students.

Graph 1
***Z*+5 Mean Difference in Overall Task Problem-Solving Performance**
Cultural Group by Task Variability Context by Background Stimulation Interaction
($n=192$)

Table 1
Mean Differences in Home Stimulation Perception, Preference for Variability, and Teacher Rating Measures, by Cultural Group

	Mean Score		F	Level of Significance
	African American (n=96)	European American (n=96)		
Home Stimulation Perception	3.83	2.25	78.33	.001
Preference for Variability (average score)	10.63	7.62	50.56	.001
Classroom Achievement	2.33	2.83	11.26	.001
Classroom Motivation	2.66	3.17	7.13	.008

Table 2
Correlation Coefficient of Home Stimulation Perception, Preference for Variability, and Task Motivation with Task Performance Context for African American Children

	Background Music (n=48)	
	Low-Variability	High-Variability
Home Stimulation Perception	.10	.53**
Preference for Variability	.01	.35*
Low-Variability Motivation	.26	-.09
High-Variability Motivation	-.12	.28*
	No Background Music (n=48)	
	Low-Variability Performance	High-Variability Performance
Home Stimulation Perception	.27	.47**
Preference for Variability	.26	.30*
Low-Variability Motivation	.09	.13
High-Variability Motivation	.10	.30*

*p<.05 **p<.01

Discussion and Synthesis of the Findings

The major purpose of this experimental research was threefold: (1) to extend the range of conditions of previous studies (Albury, 1993; Allen & Boykin, 1991; Boykin, 1978, 1982; Boykin & Allen, 1988; Boykin & Cunningham, in press; Boykin et al, 1997; Tuck & Boykin, 1989; Bailey & Walton, 1994), which found that African American children's cognitive performance can be enhanced by incorporating aspects of Afro-cultural themes (i.e., movement, communalism, and verve) into learning and performance contexts; (2) to determine the cultural orientation and socialization factors that mediate those effects; and (3) to examine the motivational and school-based factors that may relate to the obtained learning and performance outcomes.

The results of this current body of research were generally consistent with previous findings and added to the literature on African American children's learning and achievement performance in several ways. Among the salient findings are the following:

1. Cognitive processing (encoding and inferencing) is enhanced when prose learning materials are conjoined to syncopated music and when learners' movement expression is encouraged rather than inhibited. Moreover, comprehension is even more enhanced when learning materials encompass high movement-expressive themes as opposed to low movement-expressive themes.

2. Comprehension performance remains stable over time (e.g., across three trials) when interspersed break sessions provide syncopated music and greater opportunity for movement expression in comparison to their being devoid of music and movement opportunity.

3. Creative problem-solving and task engagement are greatly facilitated in a communal learning context in which no rewards are given and children are simply encouraged to work together for the good of the group, as opposed to in an individualistic learning context.

4. Cognitive processing (encoding and inferencing) of a prose text is superior in a communal-dyad learning context in contrast to either a scripted peer-tutoring criterion context (children working together to meet a preestablished criterion) or an individualistic criterion learning context (students working alone to meet a preestablished criterion).

5. Academic problem-solving performance is enhanced when tasks (in areas such as vocabulary, picture sequencing, mathematics, and spelling) are presented in a high-

variability context (random sequence regardless of task-type) as opposed to a low-variability context (blocked sequence by task-type).

6. Problem-solving performance on experimental tasks (e.g., color matching, listening, visual scanning, schema reproduction) is facilitated in a high-variability context and facilitated even further when syncopated music is added in the background.

7. Increased motivation is generally obtained in contexts informed by Afro-cultural themes.

Enhanced learning and performance results were achieved for African American children across the three cultural themes of interest. These effects were obtained across a range of conditions that were operationalized to be consistent with the various themes and across a range of cognitive outcomes. These outcomes include basic problem-solving using experimental and academically relevant tasks, comprehension of orally and textually presented material, and more open-ended creative tasks.

Several important implications arise from the above findings. The performance enhancing effects of Afro-cultural factors hold for basic cognitive skills such as direct factual recall. They also hold for higher-order cognitive functioning such as when students must draw unstated inferential relationships among disparate factual information. Furthermore, when it comes to producing enhanced outcomes, it seems more crucial to include the cultural manipulation as an integral part of the task context as opposed to introducing it merely during break periods. These enhanced effects can be maintained across multiple trials within a given experimental setting. When they are not directly a part of the task performance context, cultural factors have an impact on sustaining the effects that are more directly tied to cultural factors in the performance context.

These studies also drew comparisons between African American and European American students' cognitive functioning in the various contexts of movement and verve or physical stimulation studies. The results of the significant cultural group-by-treatment interactions generally reveal that while European American students substantially outperformed their African American counterparts in contexts where Afro-cultural themes were available to a lesser extent, African American students substantially outperformed their more educationally successful European American counterparts when certain factors derived from their cultural experiences were incorporated into learning and performance contexts. The significant cultural group-by-treatment interactions reveal that African American children attained their highest learning or performance when contexts were more greatly enriched by multiple sources of a given Afro-cultural theme. By contrast, they attained their lowest learning

in contexts where such Afro-cultural factors were not made available. When African American students were exposed to any one source of a given Afro-cultural theme, their learning and performance were enhanced far more so than under a condition in which no such source was made available. Consequently, these studies provide clear evidence of *interchangeability* in cultural theme sources.

The present investigations also found that the sample of African American children reported significantly greater levels of home movement expressiveness and child activity, home stimulation, and preference for greater stimulation variability than did their European American counterparts. The results also suggest that the African American children preferred cooperative to individualistic or competitive learning contexts, endorsed a communal over individualistic orientation, preferred to participate in communal rather than individualistic activities, and demonstrated a greater preference for variability versus routine. Taken together, these results suggest that the identified Afro-cultural themes are highly salient in the extant home experiences of African American children. They also suggest that these themes manifest for many African American children in the forms of learning preferences and prominent value orientations.

Further, the correlation findings point to significant functional relationships between the perceived presence of Afro-cultural themes in the home environment and the subsequent preference for these themes among African American children. This pattern of results is consistent with the notion that Afro-cultural themes have been embraced by many African American children and that this endorsement may be rooted in the cultivation of these themes in the children's home environments. Surely, by definition, culture is that which is cultivated; thus, the possibility that the results obtained in these investigations are actually manifestations of cultural phenomena gains some credence.

When home environment and cultural orientation variables were examined relative to learning and performance, several interesting findings emerged. African American children from homes characterized as high in movement expressiveness or physical stimulation or those children preferring greater levels of variability obtained lower achievement outcomes in contexts that afforded lower levels of these Afro-cultural themes. Also, the higher the reported movement activity level of an African American child, the better that child learned in high-movement expressive contexts, regardless of the level of movement imagery contained in the learning material. Similarly, the greater African American children's perceived home stimulation level, the greater also was their problem-solving achievement in the high-variability context, notwithstanding the presence or absence of background stimulation.

Furthermore, African American students in communal learning contexts reported more often that they liked their peers and cared more about their peers' learning. In such contexts, African American students also rated their own learning higher than did African American students in the scripted peer-tutoring criterion context. Lastly, the learning context preference and evaluation analyses revealed three significant findings: the greater the level of African American children's endorsement for individualistic learning contexts, the less help they provided to other members of their group, the less they liked working on tasks with their group, and the more they enjoyed working alone.

Collectively, these results suggest that home experiences and cultural orientations relate to performance outcomes directly and (as in the case of the communalism studies) to processes and interpersonal dynamics that would seem linked to enhanced or dampened performance. These findings thus suggest that cultural factors bear a significant responsibility for the differential patterns of performance outcomes obtained in the various investigations. To dwell more concretely on one issue, consider the relationships between self-rated child activity level and performance. For African American children, positive correlations were obtained between child activity (movement expressiveness) and learning in the high movement-expressive context, that is, activity level related positively to performance in such contexts. This finding runs counter to the assumption that "excessive" movement should be a hindrance to learning, as in the argument for the deleterious effects of "hyperactivity" on learning. The data, however, support the cultural enhancement argument. The opposite held for the European American children sampled: for them, the greater the ratings of child activity, the worse they performed in both the high-movement-expressive *and* low-movement-expressive contexts. That is, the greater the activity level, White students' learning performance in general worsened. This latter pattern *is* clearly consistent with the hyperactivity argument.

Lastly, European American students received higher ratings in classroom achievement and classroom motivation from their homeroom teachers. They also scored higher on a standardized vocabulary test than did African American students. These two findings reinforce the notion that, even after controlling for income level, European American children have more favorable educational experiences and outcomes than do African American students, even in integrated school settings.

In no way should the findings of these investigations be construed to suggest that all African American children respond in the same way and have the same results when their learning occurs in Afro-cultural theme-based contexts. Indeed, a range of responses and performance outcomes for the sampled African American students was obtained, and it is an

empirical fact that the enhanced performance findings in the Afro-cultural contexts did not hold for all of them. However, those findings held for a sufficient number of children to produce significant mean differences. Moreover, the empirical fact that the divergent results in the different contexts are tied to home-based and cultural orientation-based factors suggests that the extent to which these Afro-cultural themes are present or salient in the lives of a given African American child is what influences his or her performance outcomes, not merely race.

It is premature to offer concrete suggestions for the provision of more "culturally responsive" pedagogical practices based simply on the findings from these investigations. Nonetheless, it remains the case that the enhanced performance outcomes we obtained are functionally linked to the cultural contexts in which cognitive demands are made of children and, for low-income African American elementary school children in particular, to the cultural orientations expressed. Therefore, it seems plausible to posit that if we as educators are serious about building upon African American children's cultural assets, we should seriously consider broadening, not replacing, the cultural themes that inform teaching practices and pedagogical activities in the classrooms that serve them (see Boykin, 2000). By broadening the available contexts, we can more greatly ensure that a wider range, and indeed, a greater number of African American schoolchildren will have successful academic outcomes.

Limitations and Future Directions

Though the work attempted to date is encouraging, considerable room for improvement exists as this project moves toward field research implementation. Further work to identify the conditions that enhance and dampen performance outcomes is needed, and answers are needed to important new questions that have been raised by the investigations. For example, although music has proven to produce enhanced outcomes in certain studies, several questions remain. For example, what kind of music is optimal? Would all kinds of music produce similar effects? Research is currently being planned that will systematically examine the effects of syncopated versus non-syncopated music on learning outcomes. Moreover, can enhanced performance result from the encouragement of movement without linking those enhancements to music? Do different types of movement need to be considered? Again, these issues are being explored in ongoing research.

Additionally, although stories with high movement content have been shown to produce enhanced outcomes, it is not known if this effect would likewise hold for content featuring communal (as opposed to individualistic) or vervistic themes. There are other ways

of configuring group/communal activities and group participants than the groupings explored to date. These alternative options should be explored. Moreover, the manner in which the verve paradigm has been construed makes it more challenging to make direct extrapolations to pedagogical practice. Indeed, very few classroom activities last for only one minute. The time frame for task presentations must be extended to create more realistic classroom contexts.

Beyond these examples, greater refinements are needed in the questionnaires employed in the various investigations. Although some promising results were obtained from the study instruments, these results were not necessarily all internally consistent, nor were all the plausible correlations. Even for the significant findings, the coefficients were low to moderate in magnitude. The manner in which the items are presented may need to be explored further. More open-ended inquiries or more direct observations may be needed to supplement results with the various paper and pencil measures. Finally, a more sensitive or appropriate index needs to be constructed to discern metacognition.

References

Abrahams, R.D., & Szwed, J.F. (Eds.) (1983). *After Africa*. New Haven, CT: Yale University Press.

Akbar, N. (1976). Rhythmic patterns in African personality. In L. King (Ed.), *Assumptions and paradigms for research on Black people*. Los Angeles: Fanon Center Publications.

Albury, A. (1993). Social orientations, learning conditions and learning outcomes among low-income Black and White grade school children. Doctoral dissertation, Howard University, Washington, DC.

Allen, B.A., & Boykin, A.W. (1991). The influence of contextual factors on Afro-American and Euro-American children's performance: Effects of movement opportunity and music. *International Journal of Psychology, 26*, 273-287.

Allen, B.A., & Butler, L. (1996). The effects of music and movement opportunity on the analogical reasoning performance of African American and White school children: A preliminary study. *Journal of Black Psychology, 22*(3), 316-328.

Armour-Thomas, E., Bruno, K., & Allen, B.A. (1992). Toward an understanding of higher-order thinking among minority students. *Psychology in the Schools, 29*, 273-279.

Bailey, C. (1996). The influence of on the task performance of low-income African American students: Implications for schooling. Paper presented at the annual meeting American Educational Research Association, New York, NY.

Bailey, C., & Walton, S. (1994). Proactive Afrocultural influences on the task performance of African American school children: The progression of the verve paradigm. Paper presented at the 26th annual convention of the Association of Black Psychologists, Philadelphia, PA.

Boykin, A.W. (1978). Psychological/behavioral verve in academic/task performance: Pretheoretical considerations. *Journal of Negro Education, 47*, 343-354.

Boykin, A.W. (1979). Psychological/behavioral verve: Some theoretical explorations and empirical manifestations. In A.W. Boykin, A. J. Franklin, & J. F. Yates (Eds.), *Research directions of Black psychologists*, 351-367. New York: Russell Sage.

Boykin, A.W. (1982). Task variability and the performance of Black and White schoolchildren: Vervistic explorations. *Journal of Black Studies, 12*, 469-485.

Boykin, A.W. (1983). The academic performance of Afro-American children. In J. Spence (Ed.), *Achievement and achievement motives*, 321-371. San Francisco: W. Freeman.

Boykin, A.W. (1986). The triple quandary and the schooling of Afro-American children. In U. Neisser (Ed.), *The school achievement of minority children*, 57-92. Hillsdale, NJ: Erlbaum.

Boykin, A.W. (1994). Harvesting talent and culture: African-American children and educational reform. In R. Rossi (Ed.), *Schools and students at risk*, 116-138. New York: Teachers College Press.

Boykin, A.W. (1995). Culture matters in the psychosocial experiences of African Americans: Some conceptual, process and practical considerations. Paper presented at a symposium on "Continuities between African and African-American Culture in Socialization and Human Development," at the annual meeting of the American Psychological Association, New York, NY.

Boykin, A.W. (2000). The Talent Development model of schooling: Placing students at promise for academic success. *Journal of Education for Students Placed At Risk, 5*, 3-25.

Boykin, A.W. (in press). Changing the schooling paradigm: Talent Development and the proactive incorporation of culture. In V. Thomas & C. Ellison (Eds.), *Educational excellence and equity in the African American community*. New York: Teachers College Press.

Boykin, A.W., & Allen, B. (1988). Rhythmic-movement facilitation of learning in working-class Afro-American children. *Journal of Genetic Psychology, 149*, 335-348.

Boykin, A.W., & Cunningham, R.T. (in press). The effects of movement expressiveness in story content and learning context on the analogical reasoning performance of African American children. *Journal of Black Psychology*.

Boykin, A.W., & Ellison, C. (1995). The multiple ecologies of Black youth socialization: An Afrographic analysis. In R. Taylor (Ed.), *Black youth*. Newbury Park, CA: Sage.

Boykin, A.W., & Mungai-Kamau, M. (1997). The effects of movement/music expressiveness on-task and off-task contexts on the prose recall of low-income African American and European American children. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

Boykin, A.W., Allen, B., Davis, L.H., & Senior, A.M. (1997). Task performance and Black and White children across levels of presentation variability. *Journal of Psychology, 131(4)*, 427-437.

Carlson, D. (1982). "Updating" individualism and the work ethic: Corporate logic in the classroom. *Curriculum Inquiry, 12*, 125-160.

Coleman, K.D. (1996). The influence of communal learning contexts on African American elementary student's creative problem solving. Master's thesis, Howard University, Washington, DC.

Coleman, K., & Dill, E. (1996). The influence of communal learning on African American elementary students' performance on text recall and creative problem-solving. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.

Dill, E.M. (1996). The influence of communal and peer-tutoring contexts on the text recall learning on low-income African American students. Master's thesis, Howard University, Washington, DC.

Dill, E.M., & Boykin, A.W. (in press). The comparative influence of individualistic, peer-tutoring and communalistic learning contexts on the text recall of African American children. *Journal of Black Psychology*.

Everhart, R.B. (1985). On feeling good about oneself: Practical ideology in schools of choice. *Sociology of Education, 58*, 251-260.

Gatti, A. (1994). *Tales from the African Plains*. (1st edition). Van Nuys, CA: Duttons.

Gilmore, P. (1985). "Gimme room:" School resistance, attitudes and access to literacy. *Journal of Education, 167*, 111-128.

Guilford, J.P. (1967). *The nature of human intelligence*. New York: McGraw-Hill.

Hale, J. (1980). Demythicizing the education of Black children. In R. Jones (Ed.), *Black psychology* (2nd ed.). New York: Harper & Row.

Hough, L.M. (1992). The "Big Five" personality variables–construct confusion: Description versus prediction. *Human Performance, 5*, 139-155.

Johnson, D.W., & Johnson, R.T. (1991). *Joining together: Group theory and group skills* (4th edition). Englewood Cliffs, NJ: Prentice-Hall.

Johnson, D.W., & Norem-Hebeisen, A.A. (1979). A measure of cooperative, competitive, and individualistic attitudes. *Journal of Social Psychology, 109*, 253-256.

Jones, J. (1979). Conceptual and strategic issues in the relationship of Black psychology to American social science. In A.W. Boykin, A.J. Franklin, & J.F. Yates (Eds.), *Research directions of Black psychologists*. New York: Russell Sage.

Lester, J. (1989). *How many spots does a leopard have? and other tales*. New York: Scholastic.

Morgan, H. (1980). How schools fail Black children. *Social Policy, 11*(4), 49-54.

Morgan, H. (1990). Assessment of students' behavioral interactions during on-task classroom activities. *Perceptual and Motor Skills, 70*, 563-569.

Slavin, R.E., & Oickle, E. (1981). Effects of cooperative learning teams on student achievement and race relations: Treatment by race interactions. *Sociology of Education, 54(3)*, 174-180.

Spence, J. (1985). Achievement American style: The rewards and costs of individualism. *American Psychologist, 40*, 1285-1295.

Sternberg, R.J. (1985). *Beyond IQ: A triarchic theory of human intelligence*. Cambridge: Cambridge University Press.

Sternberg, R.J. (1986). *Intelligence applied: Understanding and increasing your intellectual skills*. New York: Harcourt, Brace, Jovanovich.

Thompson, R.T. (1984). *Flash of the spirit: African and Afro-American art and philosophy*. New York: Vintage Books.

Torrance, E.P., & Goff, K. (1989). A quiet revolution. *Journal of Creative Behavior, 23(2)*, 136-145.

Tuck, K., & Boykin, A.W. (1989). Verve effects: The relationship of task performance to stimulus preference and variability in low-income Black and White children. In A. Harrison (Ed.), *The eleventh conference on empirical research in Black psychology*. Washington, DC: NIMH Publications.

Young, V. (1970). Family and childhood in a southern Negro community. *American Anthropologist, 72*, 269-288.

CRESPAR

Johns Hopkins University
Center for Social Organization of Schools
3003 North Charles Street – Suite 200
Baltimore MD 21218
410-516-8800 / 410-516-8890 fax

Howard University
2900 Van Ness Street, NW
Washington DC 20008
202-806-8484 / 202-806-8498 fax